Ag

THE PROPERTY OF THE PROPERTY O

another at a uniform pitch. Conductor loop 2 can be arranged at one side of the housing, and the conductor loop 9 arranged on an opposite housing side. Also the conductor loop layout 9 can be offset relative to that of conductor loop 2 by, e.g., a half pitch as is the arrangement depicted in Figure 1a. It will be understood that the Figures 4a, 4b sensor includes a flux path area on housing 15 which will be defined by respective inner and outer concentric circular boundaries corresponding with the reach of the measuring core air gap.—

## **IN THE CLAIMS**:

Please cancel claims 1-10 and replace with new claims 11-22 as follows:

- 11. An inductive sensor, comprising:
  - a fixed housing;

a body moveable on said fixed housing, said body having an inductive transmission element operative for generating an alternating magnetic field flux during movement of said body said flux passing over a flux path area of said fixed housing; and

at least one conductor loop arranged on the fixed housing so as to extend along a measurement length of said housing, said conductor loop including a feed line extending along the measurement length and a return line, said return line having a path which at regular intervals of said measurement length alternates into and out of said flux path area, a permeation of said return line at a given path location by the flux of said flux region inducing a loop output voltage indicative of a measurement length position of said body on said fixed housing.

An inductive sensor according to claim, further comprising a reference loop, said reference loop having a loop return line disposed in said flux path area so that said reference loop return line is continuously permeated by all of said flux inducing a reference loop output voltage for use as a reference for a total voltage induced with said inductive transmission element.

- 13. An inductive sensor according to claim 11, further comprising another conductor loop arranged on said fixed housing, said other conductor loop including a second feed line and a second return line, said second return line having a path which at regular intervals of said measurement length which are offset from the intervals of said one conductor loop alternates into and out of said flux path area, said other loop inducing a loop output voltage additive to the output voltage of said one conductor loop for indicating a measurement length position of said body on said fixed housing.
- 14. An inductive sensor according to claim 11, further comprising another conductor loop arranged on said fixed housing, said other conductor loop including a second feed line and a second return line, said second return line being arranged at a fixed housing side opposite a housing side at which said one conductor loop return line is arranged, said second return line at regular intervals of said measurement length which are offset from the intervals of said one conductor loop alternating into and out of said flux path area, said other

Subs

loop inducing another loop output voltage, a difference between said other loop output voltage and the voltage induced in said one conductor loop indicating a measurement length position of said body on the housing.

An inductive sensor according to claim 17, wherein plural independent measuring loops are provided for obtaining body position indicative measurement values.

16. An inductive sensor according to claim 11, wherein said return line pathalternates into and out of said flux path area at locations spaced one from another at a uniform pitch along said measurement length, said inductive transmission element having a measuring core of high permeability material, said core having an air gap, a width of the air gap in a direction of said measurement length corresponding to said pitch.

An inductive sensor according to claim 16, wherein an effective length of said air gap is a whole-number multiple of said pitch.

An inductive sensor according to claim so, wherein an effective length of said air gap is twice said pitch.

Surx

19. An inductive sensor according to claim 11, wherein said return line path alternates into and out of said flux path area at locations spaced one from another at a uniform

Int. Could

pitch along said measurement length, said inductive transmission element having a measuring core of high permeability material, said core having an air gap, an average of an induction over a width of said conductor along a line perpendicular to a measurement length direction during a movement of the measuring core rising and falling in an approximately linear form over a distance equal to said pitch.

An inductive sensor according to claim 11, wherein said measurement length is circular, said conductor loop being arranged on said housing in a circular course, said transmission element being mounted for rotation about said conductor loop for measuring an angular position of the body on said measurement length.

21. An inductive sensor according to claim 20, further comprising another conductor loop arranged on said fixed housing in a circular course, said one and said other conductor loops each extending over an angle of 360 degrees, said other conductor loop including a second feed line and a second return line, said second return line having a path which at regulars intervals of said measurement length alternates into and out of said flux path area, said other loop inducing another loop voltage, a ratio of said one conductor loop voltage over said other loop conductor voltage being indicative of a body angular position on said fixed housing.

dio.

An inductive sensor according to claim 2, wherein said output voltages of said one conductor loop and said output voltage of said other conductor loop approximate out-of-phase sine functions.

## **IN THE ABSTRACT**:

After amended page 12, add the next following abstract of the disclosure page: